

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

ATTORNEY DOCKET NO.: 1153-702USPT

In re Application of: **JOHNSTON, Thomas**

Confirmation No.: **8190**

Serial No.: **10/733797**

Examiner: **Campbell, Thor S.**

Filed: **December 11, 2003**

Art Unit: **3742**

For: **METHOD AND DEVICE FOR HEATING
FLUIDS**

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APPEAL BRIEF UNDER 37 C.F.R. 41.37

Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is submitted in support of the Appeal of the Examiner's final rejection of Claims 1 through 10 in the above-identified application. A Notice of Appeal was filed in this case by facsimile on August 24, 2005 and received in the United States Patent and Trademark Office on that same date. Please charge the fee of \$250.00 due under 37 C.F.R. §1.17(c) for filing the brief, as well as any additional required fees, to **Deposit Account No. 50-3468**.

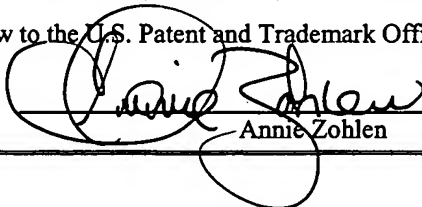
CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(A)]

I hereby certify that this correspondence is being:

☒ deposited with the U.S. Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

☐ transmitted by facsimile on the date shown below to the U.S. Patent and Trademark Office at (571) 273-8300.

9/29/05
Date


Annie Zohlen

REAL PARTIES IN INTEREST

The real parties in interest in the present Application are the Applicants, Thomas Johnston and Timothy Vaughn.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants, or the Appellants' legal representative, which directly affect or would be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

The present application was filed with 10 claims. None of the claims have been amended or canceled during prosecution. Accordingly, Claims 1 through 10 are pending in this application. Claims 1 through 10 stand finally rejected by the Examiner as noted in the Final Office Action dated August 10, 2005. The rejection of Claims 1 through 10 is appealed. A current version of the pending claims is set forth in the attached Appendix A in accordance with 37 C.F.R. 41.37(c)(1)(viii).

STATUS OF AMENDMENTS

No amendments to the claims have been made to the originally-filed Application, either before or after the final rejection.

SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent Claim 1 of the present invention recites a method for heating fluid, wherein the fluid to be heated is passed through a vessel 104 made of perfluoroalkoxy or polytetrafluoroethylene (PFA). (Specification, page 7, line 21 – page 8, line 1). The vessel 104 is coiled around a radiant energy source 103 and the vessel 104 and the radiant energy source 103 are enclosed in a chamber 100. (Specification, page 7, lines 17 - 19). Radiation from the radiant energy source 103 passes through the vessel 104 and heats the fluid directly without first heating the vessel 104. (Specification, page 7, lines 17 – 20; page 8, lines 8 - 10). The temperature of the fluid at the outlet end 102 of the vessel 104 is monitored with a temperature sensing device and the flow of the fluid through the vessel 104, and/or the energy emitted by the

radiant energy source 103, are adjusted as necessary to maintain the desired temperature of the fluid. (Specification, page 9, lines 8 - 17).

Independent Claim 6 of the present invention recites a heater for heating a liquid including at least one radiant energy source 103, a vessel 104 for carrying a fluid to be heated made of PFA, such vessel 104 being coiled around the radiant energy source 103. (Specification, page 7, line 10 - page 8, line 1). The vessel 104 and the radiant energy source 103 are enclosed in a chamber 100. (Specification, page 6, lines 14 - 19). A device monitors the temperature of the fluid at the outlet end 102 of the vessel 104 and the flow of the fluid through the vessel 104, or the energy emitted by the radiant energy source 103, are adjusted as necessary to maintain the desired temperature of the fluid. (Specification, page 9, lines 8 - 17).

Independent Claim 9 of the present invention recites a heater for heating a liquid including a chamber 100 and a vessel 104 within the chamber 100, the vessel 104 being made of PFA and carrying a fluid to be heated. (Specification, page 7, line 10 - page 8, line 1). The vessel 104 is wound around the radiant energy source 103 and a device for sensing the temperature of the fluid is placed at the outlet end 102 of the vessel 104. (Specification, page 7, lines 17 - 19; page 9, lines 9 - 11). The flow of the fluid through the vessel 104, or the energy emitted by the radiant energy source 103, are adjusted as necessary to maintain the desired temperature of the fluid. (Specification, page 9, lines 11 - 17).

Independent Claim 10 of the present invention recites a heater for heating a liquid which includes the following components:

- (1) means for supplying radiant energy (Specification, page 7, line 11 - 20 which states "The radiant energy source 103 can be, for example, an infrared lamp or lamps but should have a wavelength at least as long as infrared. If the radiant energy source 103 is more than one lamp, the lamps can be configured in any of a number of different ways to optimize the energy emitted from lamps with respect to the vessel 104. The radiant energy source 103 is held in the chamber 100 by its ends, either by an attachment to the end plates of the chamber 100 or by an attachment to the vessel 104. The power of the radiant energy source 103 may be adjusted to optimize performance so as to enhance efficiency of heat transfer to the fluid to be heated. Under certain circumstances, lamps having different

operating characteristics can be selected to accommodate heating fluids having widely variant heat absorption properties.”);

- (2) means for carrying a fluid to be heated wherein said means for carrying a fluid to be heated is wound around said means for supplying radiant energy (Specification, page 7, lines 21 – page 8, line 2 which states “The vessel 104 used to carry fluid to be heated is formed of an inert or non-reactive material to avoid contaminating the fluid. According to the preferred embodiment, the vessel 104 is formed of perfluoroalkoxy or polytetrafluoroethylene. The size of the vessel 104 may vary.”; also page 8, line 5 – 6 which states “The size of the vessel 104 can be adjusted in order to accommodate differing flow rates.”);
- (3) means for enclosing said means for supplying radiant energy and said means for carrying a fluid to be heated (Specification, page 6, lines 11 - 13 which states “. It will be apparent to one of ordinary skill in the art that the material used to make the chamber should be lightweight and easy to mill but solid and durable for withstanding the rigors of processing such as, for example, aluminum.”; also page 6, line 23 – page 7, line 2 which states “The shape of the chamber 100 can be rectangular, as shown in FIG. 1, cylindrical, square, or any other configuration that will accommodate the radiant energy source 103 and vessel 104 discussed below.”);
- (4) means for sensing the temperature of said fluid to be heated wherein the intensity of said means for supplying radiant energy is adjusted in response to the temperature detected at the outlet of said means for carrying a fluid to be heated (Specification, page 9, lines 9 - 15 which states “In the preferred embodiment, a programmable temperature/process controller is attached to the outlet end 102. The controller monitors the temperature of the fluid at the outlet end 102 and compares it to a target value. If the deviation between the actual temperature and the target temperature varies more than an allowable amount, a signal is sent to the radiant energy source 103 whereby the power to the radiant energy source 103 may be increased or decreased to effect a change in the temperature of the fluid to be heated.”).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

There is only one ground of rejection asserted by the Examiner and, as a result, there is only one ground of rejection to be reviewed in this appeal. The Examiner has rejected Claims 1 through 10 under 35 U.S.C. §103(a) as being unpatentable over the combination of Geoffrey Batchelder (U.S. Patent No. 5,054,107) (hereinafter "*Batchelder*") in view of Vischer, et. al. (U.S. Patent No. 4,032,748) (hereinafter, "*Vischer*").

ARGUMENT

1. Background

Most radiant heat exchange systems employ a radiant energy source to heat a vessel made of a material, e.g. quartz, and that vessel, in turn, imparts heat to the liquid inside the vessel. In such systems, it is important that the radiant energy source be optimized to cause the vessel to generate its maximum heat. There was no teaching or suggestion in the prior art to use material for the vessel that is impervious to the energy radiated by the radiant energy source, thereby allowing the radiant energy source to heat the fluid directly. In fact, it is reasonable to assume that polymeric materials should not be placed in the proximity of a radiant energy source because the material would either (i) be so thin that it would melt, or (ii) be so thick that it does not allow the radiant energy through to the fluid within the vessel. In short, while polymeric materials, including PFA, have been used in connection with some types of heat transfer systems in the past, it is unknown in the art to make the entire vessel out of PFA in a radiant heating system so that the fluid within the vessel is actually heated directly by the radiant energy source rather than indirectly by the vessel.

2. Prior Art Cited by the Examiner

The Examiner has rejected Claims 1 through 10 under 35 U.S.C. §103(a) as being unpatentable over the combination of *Batchelder* in view of *Vischer*.

Batchelder teaches a radiation heat exchange system in which a quartz vessel is coiled around a lamp. As described above, this is the type of heat exchange system that the present invention replaces. Energy is transmitted to the quartz vessel and then the heated vessel imparts heat to the fluid within the vessel. This leads to a very undesirable system for many reasons.

For example, heating fluid in a quartz vessel can result in devitrification of the quartz which results in sloughing or shedding of particles into the fluid stream. As high temperatures are necessary to cause devitrification, the higher the temperature, the faster the quartz will devitrify. In addition, when used in combination with hydrofluoric acid (HF), quartz reacts to create hydrochloric acid, thereby contaminating the HF fluid. In fact, *Batchelder* teaches away from the use of materials other than quartz in a heat exchange system: “[t]he quartz comprising the coil is selected to transmit the lamp radiation efficiently to the fluid within the coil. Because most quartz will efficiently transmit radiation having wavelength in the range from about 0.5 microns to about 5 microns, most of the radiation emitted by the lamps will preferably be infrared radiation having wavelength within this range.” *Batchelder*, col. 3, lines 3 – 10.

The heat transfer system in *Vischer* is not a radiation heat exchange system and therefore the principles of heat transfer employed in its operation are completely unrelated to those contemplated in the present invention. *Vischer* incorporates a low mass plastic tube within a metallic heat exchange member so that the tube will expand and contract when exposed to temperature variations, thereby loosening deposited salt crystals from the inner surface of the tube. Note that the polymeric tubing is placed inside the metallic heat exchange member and is not exposed directly to the heat source. This is because polymeric tubes are typically not brought into direct contact with the heat source. *Vischer* should not be considered to be material prior art to the present invention because it describes a heat transfer system that is wholly different than the radiation system contemplated by the Applicants. However, if *Vischer* is considered to be relevant prior art, it should be appreciated that there is no suggestion that the use of a polymeric tubing would be useful in the Applicants’ invention because *Vischer* placed the polymeric tubing inside a metallic heat exchange member. If *Vischer* had truly anticipated the Applicants’ invention, there would have been no need to place the polymeric tubing inside the metallic heat exchange member.

3. Reasons Present Invention is Patentable over Prior Art

Applicants respectfully submit that there are at least four reasons that the Applicants believe that the present invention is patentable over *Batchelder* in view of *Vischer*.

a. No Basis in the Art for Combining References

First, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 682, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching, suggestion or incentive supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F. 2d 1572, 1577, 221 U.S.P.Q. 929 (Fed. Cir. 1984).

In the present case, Applicants respectfully submit that there is absolutely nothing in either *Batchelder* or *Vischer* that suggests the desirability of combining them to create the present invention. *Batchelder* selected the quartz tube because it will heat efficiently in the presence of an infrared lamp. In fact, *Batchelder* states “[b]ecause most quartz will efficiently transmit radiation having wavelength in the range from about 0.5 microns to about 5 microns, most of the radiation emitted by the lamps will preferably be infrared radiation having wavelength within this range.” *Batchelder*, col. 3, lines 6 – 10. The substitution of a polymeric tube for the quartz tube described in *Batchelder* is completely outside the scope of anything suggested or taught therein. In fact, it would be antagonistic to the invention in *Batchelder* to use a polymeric tube that was impervious to the radiation emitting from the lamp.

Vischer teaches the use of a “low mass plastic tube” in a heat transfer system (not a radiation heating system as taught in the present invention and by *Batchelder*) for its scale removal properties and does not teach or even suggest the use of PFAs for processing inert fluids. *Vischer*, col. 1, line 24. Moreover, *Vischer* requires that the polymeric tube be placed inside a metallic tube. Clearly, *Vischer* does not suggest that the low mass plastic tube suggested for use inside a metallic tube in a *non-radiation* heat exchange system could be used as an external tube in a *radiation* heat exchange system.

In conclusion, there is simply no teaching, suggestion or incentive as required in *ACS Hospital Systems* to combine the prior art cited by the Examiner. Accordingly, Applicants respectfully request withdrawal of this rejection.

b. References Are Not Properly Combinable If Their Intended Purpose Is Destroyed

The Federal Circuit has consistently held that when a rejection under § 103 is based upon the modification of a reference that destroys the purpose of the invention disclosed in the reference, such a proposed modification is not proper and a *prima facie* case of obviousness cannot be made. See, e.g., *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. 1125 (Fed. Cir. 1984) (finding that the PTO has failed to establish a *prima facie* case for obviousness when the application of one reference to another would render it "inoperable for its intended purpose.").

Batchelder teaches the use of a quartz tube because of the heat generated in the quartz by the radiation lamp. The substitution of a "low mass plastic tube" described in *Vischer* for the quartz tube described in *Batchelder* would completely destroy the function of *Batchelder's* invention. In fact, it would be completely unworkable to substitute the carefully-selected quartz tube used in the radiant heat exchange system of *Batchelder* with the low mass plastic tube used as an inner lining in the non-radiation heat transfer system of *Vischer*. Numerous problems would be encountered, including the melting of the plastic tubing under the radiant energy lamps.

The Examiner addresses this issue indirectly. In the Office Action, the Examiner states "*Batchelder* fails to anticipate the claimed invention only in that the coiled tube 12 is disclosed as being quartz tubing rather than claimed PTFE tubing. It is noted that *Batchelder* discloses the quartz tubing being connected to TEFLON tubing at the inlet and the outlet." The reason that *Batchelder* changed from Teflon tubing to quartz tubing at the inlet and outlet is precisely because Teflon tubing would render *Batchelder's* invention inoperable for its intended purpose. The lamp in *Batchelder* is intended to heat the quartz tubing which, in turn, heats the liquid carried inside that tube. Although it would have been much easier for *Batchelder* to continue the Teflon tubing through the heat exchange system, he did not. One reason that he did not is because it would have not functioned as he intended - using Teflon tubing would simply have destroyed the purpose of the invention.

Substituting the plastic tubing used as an inner lining in the non-radiation heat transfer system of *Vischer* for the quartz tubing in the radiant heat exchange system of *Batchelder* would completely destroy the purpose of the invention and, as such, a *prima facie* case of obviousness cannot be maintained and Applicants respectfully request withdrawal of this rejection.

c. Prima Facie Obviousness Requires A Reasonable Expectation of Success

The courts require that some reason or suggestion must be found in the prior art or other evidence of record that would have led one of ordinary skill in the art to produce the claimed invention in order to properly establish a *prima facie* case of obviousness. For example, in *In re Clinton*, 527 F.2d 1226, 1228, 188 U.S.P.Q. 365 (C.C.P.A. 1976) the CCPA stated that “obviousness does not require absolute predictability, but a reasonable expectation of success is necessary.” The court went on to say that, “in going from the prior art to the claimed invention, one cannot base obviousness upon what a person skilled in the art might try or might find obvious to try but rather must consider what the prior art would have led a person skilled in the art to do.” Accordingly, obviousness cannot be surmised when there is no suggestion, or expressed expectation, of success in the prior art that would have led one to perform the experimentation in the first place.

Batchelder teaches a radiation heating system with a quartz coil for use in heating ultrapure liquids. *Vischer* teaches a heat exchange system with a low mass plastic tube for use in eliminating scale deposits when heating unpure liquids. Nowhere in either patent is there a suggestion or an expressed expectation that the tube used in the scale deposit removal system of *Vischer* could replace the quartz coil in the radiation heating system of *Batchelder* to successfully arrive at a PFA tube in a direct infrared heating system. Accordingly, Applicants respectfully request withdrawal of this rejection.

d. Non-Analogous Art Cannot Be Used to Establish Obviousness

When making a determination of obviousness, it is only relevant to consider references that are analogous to the claimed invention. See *In re Wood*, 599 F.2d 1032, 1036, 202 U.S.P.Q. 171 (C.C.P.A. 1979). If the scope of any particular reference is too remote to that of the claimed invention, that reference will not be used as prior art because it is nonanalogous to the claimed invention. See, e.g., *In re Clay*, 966 F.2d 656, 658, 23 U.S.P.Q. 1058 (Fed. Cir. 1992). Prior art is deemed to be analogous if one of two tests is satisfied: (1) if the art is from the same field of endeavor, regardless of the problem addressed or (2) when the reference is not within the field of the inventor’s endeavor, if it is reasonably pertinent to the particular problem with which the inventor is involved. *In re Clay*, 966 F.2d at 658-59.

In *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992), the Federal Circuit held that the prior art process references to be non-analogous to the claimed invention even though both were used in the petroleum industry and both involved handling petroleum products in volumetric enclosures. In that case, the court said that because the references show a different “field of endeavor” and different “purposes,” they defeat the possibility of dealing with a common problem and, therefore, are non-analogous art.

Similarly, the art taught by *Vischer* relates to a scale deposit removal system for unpure liquids in electric water heaters and vaporizers using heat exchange technology. *Batchelder* and the Applicants’ invention both relate to radiation heating systems for ultrapure liquids. *Vischer* relates to *non-radiation* heat transfer systems for impure liquids. *Vischer* is entirely unconcerned with the proximity of the plastic tube to the heat source because (i) it is shielded by a metallic tube and (ii) the heat source is not a radiating lamp. In addition, because both *Batchelder* and the Applicants teach heating methods for ultrapure liquids, they are wholly unconcerned about addressing problems relating to scale buildup. The *Vischer* reference cited by the Examiner is simply non-analogous art with no common field of endeavor or purpose. Consequently, an obviousness rejection cannot be supported and Applicants respectfully request withdrawal of this rejection.

With the above arguments, Appellants respectfully suggest that they have shown why the claimed invention is not suggested by the above combination of references and that they have pointed out the deficiencies in Examiner’s rejections. All of the above rejections are therefore not well founded and should be reversed.

CONCLUSION

In conclusion, for the arguments of record and the reasons set forth above, all pending claims of the subject application continue to be in condition for allowance and Appellants seek the Board’s concurrence at this time. Appellants have pointed out with specificity the manifest error in the Examiner’s rejections, and the claim language that renders the invention patentable over the combination of references. Appellants, therefore, respectfully request that this case be remanded to the Examiner with instructions to issue a Notice of Allowance for all pending claims.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'William D. Wiese', is written over a horizontal line.

William D. Wiese

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ATTORNEY FOR APPELLANTS

APPENDIX A

1. A method for heating fluid comprising: carrying fluid to be heated through a vessel wherein said vessel is made from perfluoroalkoxy or polytetrafluoroethylene; said vessel is coiled around a radiant energy source; and said vessel and said radiant energy source are enclosed in a chamber; heating said fluid with the energy radiating from said radiant energy source; monitoring the temperature of said fluid at the outlet of said vessel with at least one temperature sensing device; and adjusting the flow of said fluid through said vessel or adjusting the energy emitted by said radiant energy source in response to changes in the temperature recorded during said monitoring.
2. The method of claim 1 wherein the inside surface of said chamber reflects radiant energy into said fluid.
3. The method of claim 1 wherein said vessel has a substantially round cross section.
4. The method of claim 1 further including a temperature sensor at said outlet of said vessel for monitoring a malfunction of said radiant energy source.
5. The method of claim 1 wherein additional radiant energy sources are located adjacent to said radiant energy source on the inside of said coiled vessel.
6. A heater for heating fluid comprising: at least one radiant energy source; a vessel for carrying a fluid to be heated wherein the vessel is made from perfluoroalkoxy or polytetrafluoroethylene and said vessel is coiled around said radiant energy source; a chamber surrounding said vessel and said radiant energy source; at least one device for monitoring the temperature of said fluid at the outlet end of said vessel; and at least one control device for adjusting the radiation emitted from said radiant energy source in response to changes in the temperature recorded by said device for monitoring the temperature of said fluid.

7. The heater of claim 6 wherein the inside surface of said chamber reflects radiant energy into said fluid.

8. The method of claim 6 wherein at least one of said control devices at said outlet monitors for a malfunction of said radiant energy source.

9. A heater for heating a liquid comprising: a chamber; a vessel within said chamber for carrying a fluid to be heated, wherein said vessel is made from perfluoroalkoxy or polytetrafluoroethylene and wherein said vessel has an inlet end and an outlet end; at least one radiant energy source within said chamber wherein said vessel is wound around said at least one radiant energy source in a heat exchange relationship with said at least one radiant energy source; and a device for sensing the temperature of said fluid at said outlet end of said vessel and adjusting the intensity of said at least one radiant energy source in response to fluctuations in the temperature of said fluid.

10. A heater for heating a liquid comprising: means for supplying radiant energy; means for carrying a fluid to be heated wherein said means for carrying a fluid to be heated is wound around said means for supplying radiant energy; means for enclosing said means for supplying radiant energy and said means for carrying a fluid to be heated; means for sensing the temperature of said fluid to be heated wherein the intensity of said means for supplying radiant energy is adjusted in response to the temperature detected at the outlet of said means for carrying a fluid to be heated.

TABLE OF AUTHORITIES

<u>EXHIBIT</u>	<u>REFERENCE</u>
Exhibit A	U.S. Patent No. 5,054,107 issued to Batchelder
Exhibit B	U.S. Patent No. 4,032,748 issued to Vischer
Exhibit C	In re Mills, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990)
Exhibit D	ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 221 U.S.P.Q. 929 (Fed. Cir. 1984)
Exhibit E	In re Gordon, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984)
Exhibit F	In re Clinton, 527 F.2d 1226, 188 U.S.P.Q. 365 (C.C.P.A. 1976)
Exhibit G	In re Wood, 599 F.2d 1032, 202 U.S.P.Q. 171 (C.C.P.A. 1979)
Exhibit H	In re Clay, 966 F.2d 656, 23 U.S.P.Q. 1058 (Fed. Cir. 1992)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Effective on 12/08/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

**FEE TRANSMITTAL
For FY 2005**☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 250.00

Complete if Known

Application Number	10/733797
Filing Date	December 11, 2003
First Named Inventor	JOHNSTON, Thomas
Examiner Name	CAMPBELL, Thor S.
Art Unit	3742
Attorney Docket No.	1153-702USPT

METHOD OF PAYMENT (check all that apply)
☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

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FEE CALCULATION**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180
Total Claims		
Extra Claims	Fee (\$)	Fee Paid (\$)
- 20 or HP = _____ x _____ = _____		
HP = highest number of total claims paid for, if greater than 20.		
Indep. Claims		
Extra Claims	Fee (\$)	Fee Paid (\$)
- 3 or HP = _____ x _____ = _____		
HP = highest number of independent claims paid for, if greater than 3.		

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
- 100 = _____	/ 50 = _____	(round up to a whole number) x _____	= _____	

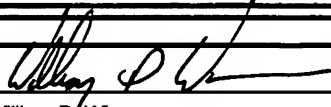
4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Appeal Brief

250.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 45,217	Telephone 512.381.8028
Name (Print/Type)	William D. Wiese	Date	9/29/05

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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